82D CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
1st Session } { No. 695

CONFIRMING AND ESTABLISHING THE TITLES OF THE STATES TO LANDS BENEATH NAVIGABLE WATERS WITHIN STATE BOUNDARIES AND TO THE NATURAL RESOURCES WITHIN SUCH LANDS AND WATERS AND PROVIDING FOR THE USE AND CONTROL OF SAID LANDS AND RESOURCES AND FOR THE CONTROL, EXPLORATION, DEVELOPMENT, AND CONSERVATION OF CERTAIN RESOURCES OF THE CONTINENTAL SHELF LYING OUTSIDE OF STATE BOUNDARIES

JULY 12, 1951.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. FELLOWS, from the Committee on the Judiciary, submitted the following

REPORT

[To accompany H. R. 4484]

The Committee on the Judiciary, to whom was referred the bill (H. R. 4484) to confirm and establish the titles of the States to lands beneath navigable waters within State boundaries and to the natural resources within such lands and waters, to provide for the use and control of the lands and resources, and to provide for the use, control, exploration, development, and conservation of certain resources of the Continental Shelf lying outside of State boundaries, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

INTRODUCTION

H. R. 4484 is similar to H. R. 8137, Eighty-first Congress, second session, favorably reported by this committee to the House of Representatives on May 17, 1950, and is also similar in many respects to H. R. 5991 on which hearings were held on August 24, 25, and 29, 1949 by Subcommittee No. 1 of the Committee on the Judiciary of the House of Representatives. Hearings were held on June 6, 1951 on House Joint Resolution 131 by the same subcommittee that conducted the hearings on H. R. 5991. During the hearing on House Joint Resolution 131, the records of all previous hearings on H. R. 5991 and a companion bill, H. R. 5992, and the records of the joint hearings before the Committee on the Judiciary of the House and a special subcommittee of the Senate Judiciary Committee, Seventy-ninth Congress, first session, held for 3 days in June 1945 on House Joint Resolution 118 and similar resolutions; hearings before the Senate Judiciary Committee, Seventy-ninth Congress, second session, held for 3 days in February 1946 on Senate Joint Resolution 48 and House Joint Resolution 225; joint hearings before the Committees on the Judiciary, Eightieth Congress, second session, held for 17 days during February and March 1948 on S. 1988 and similar House bills; hearings before the Senate Committee on Interior and Insular Affairs, Eighty-first Congress, first session, held for 6 days during October 1949 on S. 155, S. 923, S. 1545, S. 1700, and S. 2153; hearings before the Senate Committee on Interior and Insular Affairs, Eighty-first Congress, second session, held for 6 days during August 1950 on Senate Joint Resolution 195; and hearings before the Senate Committee on Interior and Insular Affairs, Eighty-second Congress, first session, held for 6 days in February, March, and April 1951 on Senate Joint Resolution 20 and S. 940, were referred to as being supplementary to the instant hearing and were made available to the subcommittee.

Testimony was received at the hearings on House Joint Resolution 131 from the Secretary of the Interior and from the Attorney General of the United States.

Testimony was also received at the hearings on H. R. 5991 and H. R. 5992 from the Secretary of the Interior; the Solicitor General of the United States; the Bureau of the Budget; Congressman Sam Hobbs, of Alabama; representatives of the National Association of Attorneys General, the attorneys general of California, Florida, Kansas, Louisiana, Maryland, Pennsylvania, South Carolina, and Texas; the land commissioner of Texas; the State Land Commission of California; the American Association of Port Authorities, representatives of other port authority associations; and five witnesses representing oil and gas lessees of offshore submerged lands. Resolutions passed by the legislatures of California, Florida, Maine, Maryland, North Carolina, and Oregon were received.

The witnesses at the hearings on House Joint Resolution 131 agreed that the various committees of Congress had conducted exhaustive hearings on the subject matter of the two resolutions. Every witness who desired to be heard was heard.

IMPERATIVE NEED FOR LEGISLATION

All agree that only the Congress can resolve the long-standing controversy between the States of the Union and the departments of the Federal Government over the ownership and control of submerged lands. This controversy, originating in 1938, has been before the Seventy-fifth, Seventy-sixth, Seventy-ninth, Eightieth, Eighty-first, and Eighty-second Congresses. The longer it continues, the more vexatious and confused it becomes. Interminable litigation has arisen between the States and the Federal Government, between applicants for leases under the Federal Mineral Leasing Act and the Departments of Justice and Interior, and between the States and their lessees. Much-needed improvements on these lands and the development of strategic natural resources within them has been seriously retarded. The committee deems it imperative that Congress resolve this needless controversy at the earliest possible date and bring to an end, once and for all, the confusion, chaos, inequities, and injustices that have resulted from the inaction of Congress.

LITIGATION HAS NOT SETTLED THE CONTROVERSY

When this committee reported favorably H. R. 8137 the cases of *United States* v. *Texas* and *United States* v. *Louisiana* were pending in the Supreme Court of the United States. Also was pending the controversy between the United States and the State of California, involving the location of the line between the inland waters and the marginal sea, which arose out of the case of *United States* v. *California* (332 U. S. 19). The Texas [1] and Louisiana [2] cases have since been decided, the opinion in the Texas case having been rendered by a divided court—4 to 3. However, a controversy now exists between the United States and the State of Louisiana as to the location of the line between the inland waters of Louisiana and the marginal sea. It is reasonable to anticipate that the dispute will continue for a long period of years, unless appropriate legislation is enacted by the Congress, for a similar dispute which arose on June 23, 1947, between the United States and the State of California has not yet been settled by the Supreme Court of the United States.

Decrees were entered in the Texas and Louisiana cases on December 11, 1950, enjoining the States and their lessees from producing oil and gas from the submerged lands within their boundaries outside of their inland waters, but decrees have not yet been entered fixing the dividing line between inland waters and the marginal sea.

The Attorney General of the United States testified that although Texas and Louisiana and their lessees had been enjoined from producing oil and gas from the submerged lands, no department of the Federal Government now has the authority to manage or lease the submerged lands or to drill new wells or to produce the wells heretofore drilled under State authority. While the Secretary of the Interior, purporting to act under his inherent powers to protect the property of the United States, has entered and from time to time renewed orders authorizing the Texas and Louisiana lessees to continue operating their producing wells, the authority given has been for relatively short periods of time, and does not include permission to drill new wells.

The need for oil is even greater now that it was when this committee reported favorably H. R. 8137. Because of such urgent need the Secretary of the Interior and the Attorney General of the United States have urged the immediate enactment of House Joint Resolution 131, identical with Senate Joint Resolution 20, on which the Senate Committee on Interior and Insular Affairs conducted hearings on March 28 and April 10, 1951. The Secretary of the Interior, in urging the enactment of House Joint Resolution 131, testified as follows:

> In the light of the strategic importance of oil to our defense effort and our economy, the executive branch of the Government should inaugurate as quickly as possible for the submerged coastal lands an oil and gas development program, consistent with conservation and all other national interests. The situation in the Gulf of Mexico is particularly urgent because of the potentialities of the

[1] *United States* v. *Texas* (339 U. S. 707).
[2] *United States* v. *Louisiana* (339 U. S. 699).

Continental Shelf there for greatly expanded production of oil. The final decrees in the Louisiana and Texas cases were entered by the Supreme Court on December 11, 1950, and all new development in the Gulf of Mexico has been at a standstill since that date.

While the committee believes that the litigation which has brought to a complete "standstill" all new development in the Gulf of Mexico makes absolutely necessary the immediate enactment of legislation on the subject matter, it is firmly of the opinion that permanent legislation covering each phase of the controversy should now be enacted. This will be accomplished by H. R. 4484, which would bring about the immediate resumption of oil and gas operations on the submerged lands, and would finally and completely settle all issues between the United States and the States and their lessees.

HISTORY OF H. R. 4484

Following the failure of the Senate in 1948 to act before adjournment either upon H. R. 5992 (passed by the House on April 30, 1948, by a vote of 257 to 29) [3] or its companion bill in the Senate, S. 1988 (reported favorably by the Senate Judiciary Committee on June 10, 1948),[4] negotiations were initiated between the Speaker of the House, the Attorney General of the United States, the Secretary of the Interior, and officials of various States in an effort to define the area, if any, within which substantial agreement might be reached in this controversy. These negotiations, which continued during the months of May, June, and July 1949, were finally terminated inasmuch as it appeared impossible to reach any accord on certain fundamental issues involved. Consequently two bills were introduced. One, H. R. 5991, which is now H. R. 4484 with perfecting amendments, contained language acceptable to some State representatives provided it was also accepted by the Federal departments. The other, H. R. 5992, contained language which representatives of the Federal departments agreed at one time to support if the State representatives would support.

In their testimony before the committee on H. R. 5991 and H. R. 5992, Federal representatives declined to endorse H. R. 5992 and urged enactment of S. 923 and S. 2153, which had been introduced at the request of the Justice, Defense, and Interior Departments and were designed to implement the decision in the California case.

After considering the voluminous record on this problem, the committee drafted a new bill in the Eighty-first Congress (H. R. 8137) which is identical with H. R. 4484 without perfecting amendments, and it is of the firmest opinion that the prompt enactment of H. R. 4484 affords a proper, equitable, and workable solution to this long-standing controversy.

PURPOSE OF LEGISLATION

H. R. 4484 consists of three titles. Title I contains the definitions. Title II confirms and establishes the rights and claims of the 48 States, asserted and exercised by them throughout our country's history, to the lands beneath navigable waters within State boundaries and the resources within such lands and waters. Title III provides for the

[3] Congressional Record 5261 (1948).
[4] S. Rept. No. 1592, Calendar No. 1646 80th Cong. 2d sess.

leasing by the Secretary of the Interior of the areas of the Continental Shelf lying outside of the State boundaries.

LANDS BENEATH NAVIGABLE WATERS WITHIN HISTORIC STATE BOUNDARIES

Title II is, in substance, the same as H. R. 5992 in the Eightieth Congress which was passed by the House by a vote of 257 to 29 and which was reported favorably by the Senate Judiciary Committee as S. 1988 but was not acted upon by the Senate prior to adjournment. It is, in substance, the same as House Joint Resolution 225, passed by the Seventy-ninth Congress by a very substantial majority [5] but vetoed by President Truman.[6] It is, in substance, the same as 24 bills introduced in the House in the Eighty-first Congress,[7] and the same as S. 1545 introduced in the Senate jointly by 31 Senators in the Eighty-first Congress,[8] and the same as S. 940 introduced by 35 Senators in this Congress.[9]

Title II merely fixes as the law of the land that which, throughout our history prior to the Supreme Court decision in the California case [10] in 1947, was generally believed and accepted to be the law of the land; namely, that the respective States are the sovereign owners of the land beneath navigable waters within their boundaries and of the natural resources within such lands and waters. Therefore, title II recognizes, confirms, vests, and establishes in the States the title to the submerged lands, which they have long claimed, over which they have always exercised all the rights and attributes of ownership.

The areas affected by title II include lands beneath navigable inland waters, such as lakes (including the Great Lakes), rivers, ports, harbors, bays, etc.; all filled in, made, or reclaimed lands which were formerly beneath navigable waters; and submerged lands seaward from the coast line for a distance of 3 miles or to the original boundary line of any State in any case where such boundary at the time the State entered the Union extended more than 3 miles seaward.

Title II does not affect the vast areas of the Continental Shelf adjacent to the United States which are outside of such State boundaries. This large shelf area, which extends as far as 200 miles seaward in the Gulf of Mexico and 100 miles seaward on the Atlantic coast is dealt with in title III of the bill.

Title II does not affect any of the Federal constitutional powers of regulation and control over the submerged lands and navigable waters within State boundaries. These powers, such as those over commerce,

[5] 92 Congressional Record 9642, 10316 (1946).

[6] 92 Congressional Record 10660 (1946).

[7] H. R. 71, Hale; H. R. 334, Boggs of Louisiana; H. R. 860, McDonough; H. R. 929, Teague; H. R. 936, Allen of Louisiana; H. R. 1212, Doyle; H. R. 1410, Passman; H. R. 2137, Bramblett; H. R. 2956, Willis; H. R. 3206, Phillips of California; H. R. 3243, Holifield; H. R. 3387, Anderson of California; H. R. 3389, Hinshaw; H. R. 3390, Johnson; H. R. 3398, Sheppard; H. R. 3415, Allen of California; H. R. 3442, Jackson of California; H. R. 3484, Scudder; H. R. 3560, McKinnon; H. R. 3591, Werdel; H. R. 3655, Poulson; H. R. 3779, Engle of California; H. R. 4170, Nixon; H. R. 5600, Welchel.

[8] By Mr. McCarran (for himself, Mr. Baldwin, Mr. Bricker, Mr. Butler, Mr. Byrd, Mr. Cain, Mr. Capehart, Mr. Connally, Mr. Cordon, Mr. Downey, Mr. Eastland, Mr. Ellender, Mr. Frear, Mr. Gurney, Mr. Hickenlooper, Mr. Holland, Mr. Jenner, Mr. Johnson of Texas, Mr. Johnston of South Carolina, Mr. Knowland, Mr. Long, Mr. Malone, Mr. Martin, Mr. Mundt, Mr. O'Conor, Mr. Reed, Mr. Robertson, Mr. Saltonstall, Mr. Schoeppel, Mr. Stennis, and Mr. Thye).

[9] By Mr. Holland (for himself, Mr. Bricker, Mr. Butler of Maryland, Mr. Butler of Nebraska, Mr. Byrd, Mr. Cain, Mr. Capehart, Mr. Carlson, Mr. Connally, Mr. Cordon, Mr. Duff, Mr. Eastland, Mr. Ellender, Mr. Frear, Mr. Hendrickson, Mr. Hickenlooper, Mr. Jenner, Mr. Johnson of Texas, Mr. Johnston of South Carolina, Mr. Knowland, Mr. Long, Mr. Malone, Mr. Martin, Mr. McCarran, Mr. McClellan, Mr. Mundt, Mr. Nixon, Mr. O'Conor, Mr. Robertson, Mr. Saltonstall, Mr. Schoeppel, Mr. Smathers, Mr. Stennis, Mr. Taft, and Mr. Thye).

[10] *United States* v. *California* (332 U. S. 19 (1947)).

navigation, flood control, national defense, and international affairs, are fully protected. Title II also gives to the Federal Government the preferred right to purchase, whenever necessary for national defense, all or any portion of the natural resources produced from these submerged lands.

On April 21, 1948, in House Report 1778,[11] the Committee on the Judiciary of the House of Representatives treated in full the problem dealt with in title II of this bill. That report sets forth in detail the reasons which lead only to the conclusion that this bill must inevitably be enacted. No new evidence has been presented to the committee which justifies any change whatever in the conclusions reached in that report. There exists today the same compelling reasons of justice, fairness, and equity that led to the adoption of that report and the subsequent passage of the same legislation by an overwhelming vote of the House.

Therefore, this committee adopts in full such House Report 1778 which appears in full in the appendix hereto and is expressly made a part of this report.

CONTINENTAL SHELF OUTSIDE OF HISTORIC STATE BOUNDARIES

What is the Continental Shelf?

Continental shelves have been defined as those slightly submerged portions of the continents that surround all the continental areas of the earth. They are a part of the same continental mass that forms the lands above water. They are that part of the continent temporarily (measured in geological time) overlapped by the oceans. The outer boundary of each shelf is marked by a sharp increase in the slope of the sea floor. It is the point where the continental mass drops off steeply toward the ocean deeps. Generally, this abrupt drop occurs where the water reaches a depth of 100 fathoms or 600 feet, and, for convenience, this depth is used as a rule of thumb in defining the outer limits of the shelf.

Along the Atlantic coast, the maximum distance from the shore to the outer edge of the shelf is 250 miles and the average distance is about 70 miles. In the Gulf of Mexico, the maximum distance is 200 miles and the average is about 93 miles. The total area of the shelf off the United States is estimated to contain about 290,000 square miles, or an area larger than New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, and Kentucky combined. The area of the shelf off Alaska is estimated to contain 600,000 square miles, an area almost as large as Alaska itself.

That part of the shelf which lies within historic State boundaries, or 3 miles in most cases, is estimated to contain about 27,000 square miles or less than 10 percent of the total area of the shelf and is covered in title II of the bill. The principal purpose of title III is to authorize the leasing by the Federal Government of the remaining 90 percent of the shelf.

Necessity for legislation

Representatives of the Federal departments, the States, and the offshore operators all urged the importance and necessity for the enactment of legislation enabling the Federal Government to lease for oil

[11] H. Rept. 1778, 80th Cong., 2d sess.

and gas operations the vast areas of the Continental Shelf outside of State boundaries. They were unanimously of the opinion, in which this committee agrees, that no law now exists whereby the Federal Government can lease those submerged lands, the development and operation of which are vital to our national economy and security. It is, therefore, the duty of the Congress to enact promptly a leasing policy for the purpose of encouraging the discovery and development of the oil potential of the Continental Shelf.

The committee is also of the opinion that legislative action is necessary in order to confirm and give validity to Presidential Proclamation 2667 of September 8, 1945, wherein the President, by Executive declaration asserted, in behalf of the United States, jurisdiction, control, and power of disposition over the natural resources of the sub soil and sea bed of the Continental Shelf. Many other nations have made assertions to a similar effect with respect to their continental shelves, and the committee believes it proper and necessary that the Congress make such an assertion in behalf of the United States. Such assertion is made in section 8 of the bill.

H. R. 4484 does not vest in the States the power to take or dispose of the natural resources of the parts of the Continental Shelf outside the original boundaries of the States. That power is vested by H. R. 4484 in the Secretary of the Interior even though some States have extended their boundaries as far as the outer edge of the shelf. Section 8 of H. R. 4484 asserts as against the other nations of the world the claim of the United States to the natural resources in the Continental Shelf. This Nation's claim to the natural resources was strengthened by the earlier action of some of the States in leasing, and consequently bringing about the actual use and occupancy of the Continental Shelf. The benefits flowing to the United States from such State action was recognized by the Supreme Court in the Louisiana case, for it said:

> So far as the issues presented here are concerned, Louisiana's enlargement of her boundary emphasizes the strength of the claim of the United States to this part of the ocean and the resources of the soil under that area, including oil.[12]

Area of agreement

A comparison of the leasing provisions contained in H. R. 5991, as originally introduced (which has now become H. R. 4484), and H. R. 5992 shows a wide area of agreement and identical language on many subjects, such as on leasing through competitive bidding; on many procedural matters in connection with the mechanics of leasing, such as notice and advertising and what they shall contain; on the size of leasing units; on the terms of the lease, such as length of primary term, royalty, and rental rates, and extension of a lease term by additional drilling operations under specified conditions; on the cancellation and forfeiture of leases; on the applicability of many sections of the Federal Mineral Leasing Act; on geological and geophysical operations; on extension of the respective States' police powers, including those of taxation and conservation, to oil and gas operations in the shelf off their respective shores; on most of the procedural matters governing an exchange of Federal leases for existing State leases in the Continental Shelf; and on continued operations under State leases pending an exchange.

[12] *United States* v. *Louisiana* (339 U. S. 705, 706).

The committee in drafting the amendments to H. R. 5991 which have been incorporated into H. R. 4484 does not believe it should disregard the substantial progress made in the conferences between State and Federal officials toward an agreement on these leasing provisions as is shown by a comparison of the two bills.

The leasing provisions of H. R. 4484 are substantially similar to the leasing provisions of House Joint Resolution 131 with certain amendments acceptable to the author of the bill, and the Departments of Justice and Interior have endorsed and supported House Joint Resolution 131 with the amendments.

S. 923

The committee has also studied S. 923, the bill originally introduced in the Senate in February 1949, at the request of the interested Federal departments and to the support of which representatives of the Justice and Interior Departments reverted in earlier hearings before this committee.

No bill similar to S. 923 has been introduced in this Congress. The committee, in an effort to fully and completely solve the controversy, has again studied the provisions of S. 923, which was formerly supported by the departments of the Government as a final and permanent solution of the controversy between the United States and the States.

The committee in previous Congresses received much evidence showing the high costs, the large capital investment, and the great physical and financial risks involved in the hazardous business of exploring and drilling for oil beneath the open seas, which has been accomplished as far as 27 miles offshore and 75 miles from a shore base.

The purpose of establishing a procedure for the leasing of these submerged lands is to encourage the earliest possible discovery and development of their oil potential so as to help provide the additional reserve productive capacity necessary to meet the Nation's petroleum requirements when we are suddenly faced, as we are now, with a grave national emergency.

Any operator who would be willing to engage in exploring the Continental Shelf—the most costly and hazardous venture ever undertaken in the continuous search for new oil reserves—must of necessity know in advance of his undertaking exactly what his obligations will be. Otherwise, he cannot attempt to calculate his risks.

The committee believes that the enactment of legislation similar to S. 923 would defeat the primary purpose of the legislation—namely, to secure discovery and development—for the plain reason that that bill delegates to the executive branch of Government such broad and sweeping authority and discretion that no one trying to operate under its provisions would know where he stood from day to day. No one undertaking the expensive exploration work in the open ocean, with all the costly and expensive equipment required, would know whether he would ever have an opportunity to secure a lease or, if he had an opportunity, what provisions such a lease might contain. If he does secure a lease, he can be deprived of the power to make decisions on important questions of operations and management which normally and rightfully should be his. If he should make a discovery, he would not know how much of his discovery he could retain or when his lease might be altered or canceled by unilateral action by the Government and his investment in effect confiscated. Reference will be made to some of these provisions in the following discussion of the leasing provisions of H. R. 4484.

Exploration provisions

In a new area such as the Continental Shelf, the first operation is exploration.

Section 16 of H. R. 4484 recognizes the right of any person, subject to the applicable provisions of law, or of any agency of the United States to conduct geologic or geophysical explorations in the Continental Shelf which do not interfere with or endanger actual operations under any lease. These provisions are practically identical with those in H. R. 5992 and S. 923.

Witnesses described in some detail the nature of geophysical operations on the open waters of the Gulf of Mexico. Considerable emphasis was placed on the fact that the petroleum industry has been diligently working for a period of over 10 years to modify and adapt various geophysical finding instruments for successful use in water operations, and that it was not until 1945 that techniques had advanced to a point where it seemed feasible to employ these methods in the open sea. The evidence showed that large areas of the Gulf can be covered rapidly, and the experience of a number of operators shows that it is impractical and too expensive to develop and utilize specially trained exploration crews and special equipment, much of which cannot be used elsewhere, for work in the open sea unless relatively large areas are open for exploration. Normally it requires from $30,000 to $40,000 a month to keep an offshore seismic crew afloat; about $40,000,000 has been spent on geophysical work alone in the Gulf of Mexico, to which could be added conservatively about $5,000,000 for basic offshore research.

Finding oil calls for a variety of efforts by a number of operators, and by a policy of free and open exploration a number of operators may explore the same areas and may compete in the bidding, thereby increasing the return to the Government and also greatly enhancing the chances of discovering oil or gas in the area. Thus, as more and more operators engage in exploration, the chances of finding oil and gas in the Continental Shelf increase.

The committee has considered and rejected the idea of a provision under which a permit or lease covering a sizable area would be granted for exploration purposes, with the lessee being required in a given period (1 to 5 years) to select certain acreage to be retained and to give up the remainder, such as was proposed in S. 923 or such as is the practice under the Mineral Leasing Act of 1920. In the committee's opinion, those provisions of the Federal Mineral Leasing Act, which have operated successfully as applied to dry-land operations, would not be as effective if applied to the operations in the open oceans where there exist so many entirely different problems. The committee believes the Federal Government should benefit from the successful experience the States have had in their leasing of parts of the Continental Shelf. Any method of fencing off areas for exploration would retard competition and development and be unwise, particularly in view of the limited number of operators who can afford the expense and risks of offshore operations.

Because of the longer time required to drill offshore wells and thereby define the limits of a discovery, any provision requiring a forced selection of that acreage which an operator can retain, such as those in S. 923, might force him to give up a large part of his discovery. Such a requirement would add an unnecessary burden to an already burdensome undertaking. The committee has concluded that adequate development will be better assured by the provisions for a short primary term and small-size leasing units, as subsequently discussed, than by any forced selection method.

Summary of leasing policy

Section 9 of H. R. 4484 requires the Secretary of the Interior, when requested by a responsible operator, or when he believes there is a demand for the purchase of leases, to offer for sale on competitive sealed bidding oil and gas leases upon unleased areas of the Continental Shelf. Sales are to be made to the responsible and qualified bidder bidding the highest cash bonus per leasing unit. Appropriate notice provisions are provided under which 30 days' notices of such sales are to be given by the Secretary, the notices to describe the tract to be leased, define the minimum bonus per acre which will be accepted, the amount of royalty and the amount of rental per acre per annum, and the time and place at which the bids would be opened. Leasing units are required to be reasonably compact in form and area and to contain not less than 640 acres nor more than 2,560 acres if within the known geologic structure of a producing oil and gas field, and not less than 2,560 acres nor more than 7,680 acres if outside the known geologic structure of a field. Leases are to be for a primary term of 5 years and as long thereafter as oil or gas is produced in paying quantities, and are to contain provisions requiring the exercise of reasonable diligence by the lessee and requiring the lessee to conduct operations in accordance with sound oil-field practices. Royalties are fixed at not less than 12½ percent of the amount or value of production saved, removed, or sold from the leasing unit, and rentals are fixed at $1 per acre per annum for the second and subsequent years during the primary term of the lease. Provision is also made for the cancellation of any lease by appropriate court proceeding for failure of the lessee to comply with any of its provisions or with the provisions of the law. Nine sections of the Federal Mineral Leasing Act are made applicable to these lands, and the leases may contain other terms and provisions consistent with the provisions of the act that may be prescribed by the Secretary.

Competitive bidding

The Secretary would sell the leases upon the basis of competitive sealed bids to be opened in public. In the committee's opinion, competitive bidding is the only sound basis upon which leases should be granted. Such procedure gives all interested operators a chance to secure leases upon the leasing units which are the subject of bidding. H. R. 4484, H. R. 5992, and S. 923 all provide for competitive bidding. Conclusive proof that this method is sound and in the public interest is shown by the experience of the States of Texas and Louisiana in selling leases on this area on a competitive bidding basis.

Size of leasing units restricted

The committee has given consideration to the size of the leasing units and believes that the sizes stipulated in the bill are appropriate. By making provision for leases of areas relatively small in size, more competition will be invited, which will result in more intensive development. Prompt and adequate development will be assured by restricting the size of the leasing units and by fixing the relatively short primary term of 5 years for each lease.

No total acreage limitations

The committee considers that any limitation on the total amount of acreage which may be held under lease by any one operator is undesirable and would adversely affect the discovery and development of these submerged lands.

The Continental Shelf off the United States, excluding Alaska, embraces some 185,800,000 acres, divided approximately in three regions, as follows:

	Acres
Pacific Ocean	11, 900, 000
Gulf of Mexico	92, 300, 000
Atlantic Ocean	81, 600, 000

In S. 923, the Federal departments advocated a ceiling of 128,000 acres (of which not more than 30,720 could be producing leases) which any person could hold under lease in any one of the three regions. This would amount to approximately one-tenth of 1 percent of the total acreage in the Gulf of Mexico and Atlantic regions and about 1 percent of that in the Pacific. In H. R. 5992, the principle of a ceiling was advanced but the number of acres fixing the ceiling was left blank.

At present there are only a limited number of operators who have the technical staffs, special equipment, and the financial resources required to undertake the exploration and development of lands under the open sea. Only about 30 operators have seen fit to bid for leases in the Gulf of Mexico. The testimony showed that present operators have spent years in attempting to solve the many unique problems presented by this type of venture, in building organizations qualified to undertake the work, and in acquiring the know-how of operating under the adverse physical conditions they face. Much of their investments have been in years of research, planning, and training of specialized staffs and in vast amounts of marine equipment which cannot be utilized elsewhere. If those who are now operating in the open Gulf are faced with acreage limitations, they will be forced to disband their exploratory organizations and dispose of their equipment, since they cannot be utilized once the maximum acreage has been acquired. Moreover, it is extremely improbable that new operators would undertake the costly initial expenditures required for staffs and equipment inasmuch as the extent of their utilization would be limited.

There is no need for an acreage restriction in so vast an area where the risks are high, the organizations required are extensive, and the expenditures are fantastic. Competitive bidding for leases, short primary terms, relatively small leasing units, and the high costs involved in operations will confine operators to relatively small areas, will prevent concentration of holdings in any one operator, and will thus insure wide ownership of leases among the limited number of qualified operators.

The practical effect of an acreage limitation of any sort would be in effect to make it prohibitive for qualified operators to carry on Continental Shelf operations. Stated in another way, the Government, by adopting acreage limitations, will in effect be legislating itself out of customers for leases and will be retarding the development of the Continental Shelf resources.

Terms of lease

An important element of sound leasing policy is fixing the terms of a fair lease. This is a matter for legislative determination and the committee believes it desirable to give consideration to the terms of leases which have been developed and are in general use in the industry after a long period of trial and error and to the terms of leases granted by the coastal States under which operations in the Continental Shelf have been conducted.

The great risks involved in offshore operations make it important that the lessee know what is required of him under his lease so as to permit him in some measure to evaluate his risks. Under commercial leases and under leases executed by the coastal States, the lessee, who bears the risks of the venture, and not the lessor, who does not share in the risks, is in charge of the operations and manages and controls these operations, subject to the lease provisions and applicable conservation laws. The difficulties, expenses, and extreme hazards involved in offshore drilling make it even more imperative that the lessee have control of his operations within the confines of his obligations as expressly fixed by the lease and subject to applicable conservation laws.

A corollary to this point is that the lease should not be subject to unilateral change by the Government or to cancellation except through court action for breach of a condition which, under legal principles, would entitle the Government to cancellation.

Powers reserved to the United States

Section 15 (a) of the bill provides that in time of war or when necessary for national defense, the President or the Congress shall have the power to terminate any lease or to suspend operations under any lease, in which event the lessee is to be paid just compensation. When a lessee buys a lease, he acquires a property interest, and, in accordance with constitutional principles, he should not be deprived of his property without just compensation therefor.

Section 15 (b) provides that the Secretary of Defense, with the approval of the President, shall have the power to prohibit any operations in those areas of the shelf as are needed for navigational purposes or for national defense. The committee is of the opinion that this provision fully and adequately protects the interests of the United States. The record is conclusive that the setting aside of large areas on the theory they will provide petroleum reserves for emergencies has long since been disproved as impractical. Experience has demonstrated that the only practical reserve of petroleum for emergencies is a fully developed reserve of excess productive capacity that can be made available immediately. Thus, the Continental Shelf should not be "locked in" but should be explored and developed.

Section 15 also retains in the United States the right of first refusal to purchase all or any portion of the production from the shelf when necessary for the national defense, and the right to extract helium from all gas produced from the shelf.

Application of State police powers

Section 8 of the bill provides that, except to the extent that it is exercised in a manner inconsistent with applicable Federal laws, the police power of each coastal State may extend to that portion of the Continental Shelf which would be within the boundaries of such State if extended seaward to the outer margin of the shelf. The police power includes, but is not limited to, the power of taxation, conservation, and control of the manner of conducting geophysical explorations. H. R. 5992 contained a similar provision.

The committee considers it proper that the police power of the coastal States be permitted to apply to that portion of the Continental Shelf appertaining to the jurisdiction and control of the United States. Exercise of such power does not confer property rights upon the coastal States but merely permits them to exercise local governmental authority, including taxation and control of the manner of geophysical operations, over the lands in the same manner as the authority applies to lands on the shore.

This type of control is justified under existing legal principles. *Skiriotes* v. *Florida* (313 U. S. 69 (1941)) and *Toomer* v. *Witsell* (334 U. S. 385 (1947)) both hold that the coastal States have the authority to extend their police jurisdiction to the areas involved subject to the approval of Congress. Also significant is the fact that the court in the California, Texas, and Louisiana cases did not hold, and did not undertake to hold, that the States' police power does not extend to operations conducted within the boundaries of the States.

Criminal statutes, workmen's compensation laws, and other police powers should be applicable to Continental Shelf operations. One of the more important police regulations to be applied under this provision is the conservation laws of the coastal States. These State laws are designed to prevent the waste of oil and gas, both under and above ground, and are administered by State conservation agencies through appropriate rules and regulations. They cover a variety of subjects, such as the location, spacing, drilling, and abandonment of wells, control of gas-oil and water-oil ratios, and the rates at which individual wells and pools may be produced.

These laws have been in effect in some States for a period of about 25 years. They have resulted in great benefits to the Nation, and they should be permitted to apply to oil and gas fields discovered on the Continental Shelf off the coastal States just as they apply to fields discovered on the uplands. The laws and the agencies administering them are in existence and are currently functioning, and their application and extension to the areas of the Continental Shelf are merely matters of applying the laws and regulations to new areas close at hand, comparable, indeed, to the situation obtaining when a new field is brought in in the upland area of an oil-producing State.

EQUITIES OF LESSEES FROM THE COASTAL STATES

By reason of the provisions in title II of the bill relating to lands within historic State boundaries, all leases heretofore granted by the States on such lands would continue in effect in accordance with their terms and provisions and the provisions of H. R. 4484, and the States would be permitted to retain all of the rentals, royalties, and other sums payable thereunder. The equities of such lessees from the coastal States would therefore be fully protected. There remains the question of protecting the equities of those holding leases purchased from the States on the areas of the Continental Shelf beyond the submerged lands covered by title II.

Exchange lease provisions

Section 10 of H. R. 4484 deals with State leases on these Continental Shelf areas. It requires the Secretary of the Interior to issue Federal leases in exchange for State leases covering such areas issued by any State or its political subdivision or grantee prior to January 1, 1949, upon certification by the appropriate State officer or agency that the lessee has complied with the lease terms and the State law. The exchange lease is to be for a term from the effective date of H. R. 4484 equal to the unexpired term of the old lease; provided, however, that if oil or gas was not being produced from such old lease on and before December 11, 1950, then such exchange lease shall be for a term from the effective date of H. R. 4484 equal to the term of the old lease remaining unexpired on December 11, 1950; and the exchange lease is to cover the same natural resources and the same portion of the Continental Shelf as the old lease, and is to provide for payment to the United States of the same rentals, royalties, and other payments as are provided for in the old lease, but may contain "such other terms and provisions, consistent with the provisions of this act, as may be prescribed by the Secretary."

Provision is made that no exchange lease shall be issued unless (1) applied for within 6 months from the effective date of the act (or within the further period provided for in sec. 18) or as may be fixed from time to time by the Secretary; (2) the applicant states in his application that the lease shall be subject to the same overriding royalties as the old lease; (3) the applicant pays to the United States all rentals, royalties, and other sums payable after December 11, 1950, which have not been paid to the lessor under the old lease; and (4) furnishes such surety bond, if any, as the Secretary may require; and "complies with other reasonable requirements as the Secretary may deem necessary to protect the interests of the United States. Provision is made that rentals, royalties, and other sums payable under the old lease before the issuance of an exchange lease may be paid to the State, its political subdivision or grantee, and that the latter shall promptly account to the United States for rentals, royalties, and other sums received after the effective date of the act as to Continental Shelf lands.

H. R. 5992 contained similar provisions, the principal difference being the cut-off date which representatives of the Federal departments formerly urged should be June 23, 1947, the date of the decision in *United States* v. *California*, instead of January 1, 1949.

The committee rejects as unworkable, inequitable, and extremely unwise provisions similar to those in S. 923 whereby a new Federal commission would be created to which complete and final authority and discretion would be delegated to determine whether it cared to issue an exchange lease; and, if so, what acreage it would cover and what royalty, rental, and other terms, conditions, and provisions it would contain.

Leasing by the States

The committee heard extensive evidence dealing with the rights of State lessees to have confirmation of their leases or to have exchange leases granted to them upon substantially the same terms and provisions as the old leases. Four States—California, Florida, Texas, and Louisiana—have issued leases covering areas off their coasts. Of these, only the leases issued by Florida, Texas, and Louisiana embrace Continental Shelf areas. All of the Florida leases were issued prior to the decision of the United States Supreme Court in *United States* v. *California*, on June 23, 1947. All of the Texas leases and about one-half of the Louisiana leases, covering in the aggregate more than 1,000,000 acres, were issued subsequent to June 23, 1947. The lessees have paid the States in bonuses and rentals around $25,000,000 for these leases. In addition, many millions more have been spent on them in exploration and development operations. The last lease sale was held by Louisiana in October 1948. It is unthinkable that all these investments should be completely wiped out by the arbitrary use of the date June 23, 1947, as the determining factor in exchanging leases.

The committee finds that the operators are entitled, as a matter of equity and right, to the issuance by the Federal Government to exchange leases for State leases covering Continental Shelf areas in accordance with the provisions of H. R. 4484. Its reasons for arriving at this conclusion follow:

State's lessees proceeded in accordance with applicable law

All of the Continental Shelf leases involved were issued at times when there was no Federal claim to the areas in which they were located. *United States* v. *California*, decided on June 23, 1947, dealt only with the 3-mile belt off the shores of that State. It did not involve areas off the shores of other States. No Federal claim was made against Texas and Louisiana until motion for leave to file suit against these States was filed by the United States Attorney General in the Supreme Court on December 21, 1948, and no leases have been issued since this date.

The leases embracing Continental Shelf areas executed by Texas and Louisiana were made pursuant to acts of their legislatures extending their seaward boundaries. In 1938, Louisiana passed an act extending her seaward boundaries to 27 marine miles. Texas had taken similar action in 1941 and later, in 1947, further extended her boundaries to the outer limits of the Continental Shelf.

These assertions of political jurisdiction by the legislatures of the two States are not subject to judicial review and the operators, being citizens of or doing business within the declared boundaries of the States, had no occasion to question such State actions and, indeed, under judicial precedents could not have been heard to raise questions in the courts concerning these actions.

Moreover, at the time Louisiana and Texas extended their seaward boundaries to 27 marine miles, the United States was not claiming ownership or jurisdiction and control over the Continental Shelf. Actually, some years earlier the State Department had taken the position that the United States had no jurisdiction over the ocean bottom of the Gulf of Mexico beyond the territorial waters adjacent to the coast and that therefore it was not in a position to grant a lease on this area.

In reality, Texas and Louisiana were not asserting rights in conflict with those being asserted by the United States at the time. Under the law a State has the power to exercise control over its citizens in exploring for and developing natural resources within its boundaries as fixed by its legislature so long as Congress has not enacted contrary legislation. This was held in *Skiriotes* v. *Florida* (313 U. S. 69 (1941)). The same ruling was made in *Toomer* v. *Witsell* (324 U. S. 325 (1947)), holding that under a South Carolina statute, South Carolina has jurisdiction over the 3-mile belt off the shore of that State so as to permit it to control shrimp fishing in the area.

Furthermore, the United States did not dispute the actions taken by the two States. While on September 8, 1945, President Truman issued Proclamation 2667 declaring that the natural resources of the subsoil of the sea bed of the Continental Shelf adjacent to the United States were subject to its jurisdiction and control, Executive Order 9663, issued on the same day, provided that neither it nor the proclamation should affect the determination of any issue between the United States and the several States relating to the ownership and control of the Continental Shelf either within or outside the 3-mile limit. From their own provisions it is clear that the proclamation and Executive order were merely an assertion of the jurisdiction and control as against foreign nations and merely the means of placing other countries on notice of the policy to be followed by the United States with reference to the resources of the Continental Shelf. This view is confirmed by the White House press release issued along with the proclamation and order.

Moreover, the proclamation does not have the effect of annexing territory to the United States or of extending the boundaries of the Nation, since under clearly established precedents any such annexation or extension requires congressional authorization.

As previously mentioned, no Federal claim against Louisiana and Texas was made until motion for leave to file suit against these States was filed by the United States Attorney General in the Supreme Court on December 21, 1948. No Federal claim has yet been made against Florida. All of the leases executed by these States were issued prior to December 21, 1948. Up to that time, the States had the right to grant leases, but the Federal Government does not yet have this right.

The equities of the operators were recognized by the Honorable Tom Clark, then Attorney General, who in the course of his argument in the California case stated that the legislation which would be recommended to Congress should—

> establish equitable standards for the recognition of investments made by private interests and should offer a basis for the continued operation of private establishments wherever consistent with the national interest and on terms that would be fair and just under all circumstances.

A similar statement was contained in the brief filed by the Government in the California case. The provisions of H. R. 4484 are designed to give effect to these assurances.

Analogy to lands acquired by cession, annexation, or discovery

In the past, where lands or territories have been acquired by the United States either by cession, conquest, or annexation, the treaties, such as those entered into with Spain on the purchase of Florida, and with Mexico on the acquisition of California, have provided a recognition of such individual property rights. A similar policy is observed when a new territory or new resource is brought under national dominion by an individual through discovery. While the individual, of course, lays claim to new lands or new resources in the name of his sovereign and not as an individual, the nation involved, through its legislative and executive branches, usually recognizes and confirms title to the resources in the individual who makes the discovery. This doctrine has found application in *Jones* v. *United States* (137 U. S. 202, 34 L. ed. 691 (1890)), which involved an act of Congress allowing the President to vest exclusive mining rights in guano to an individual who discovered an island containing such deposits.

Section 8 of H. R. 4484 asserts Federal jurisdiction and control over the Continental Shelf areas beyond original State boundaries, thus bringing the lands and resources within such areas into the same legal status as those acquired by the United States through cession or annexation; in the alternative, such lands and resources are subject to the doctrine of discovery. Adherence to the policy heretofore observed in connection with similar lands and resources brought under national dominion requires, as a matter of policy and law, that the property rights of individuals in and to such lands and resources be recognized and confirmed.

Practical reasons for exchanging leases

Aside from legal considerations, sound practical reasons require that the equities of the operators be recognized. Exploring and drilling for oil on the Continental Shelf is a venturesome, pioneering undertaking. All of the operations are hazardous, costly ventures that require large amounts of risk capital and no assurance of return. Offshore drilling has imposed problems in the construction of drilling platforms, in the conduct of drilling operations, in the transportation of men and materials from and to the shore, and in the measures taken to protect against weather far more serious than have been encountered in any comparable type of operation. As of February 14, 1951, 235 wells had been drilled on leases sold by the States of Texas and Louisiana, resulting in 91 oil wells, 28 gas condensate wells, 4 dry gas wells, and 112 dry holes. The total oil produced up to that date is estimated at about 9,500,000 barrels. Present production, practically all of which is off Louisiana, amounts to 20,000 barrels per day. Offshore operators have spent in excess of $250,000,000 in the search for oil in the Gulf of Mexico. The gross revenue of oil produced has amounted to about $20,000,000.

The operators who up to now have carried out the geophysical exploration and the costly and hazardous drilling operations are in a better position to develop and produce the natural resources of the Continental Shelf than are others who might be given leases subsequently and who have no knowledge of the former operations. Furthermore, the alternate procedure of taking the leases away from the present owners and transferring them to other operators would not only involve an unjust forfeiture, but would cause a substantial delay in securing development of the resources and result in a waste through the dismantling of organizations which have heretofore been developed and perfected in carrying out those operations. Accordingly, every practical consideration justifies the equity and reasonableness of the provisions of H. R. 4484, recognizing the rights and equities of the present operators.

The operators involved purchased their leases in good faith, relying upon the laws of the respective States in effect at the time and since there was no antagonistic Federal claim being asserted at the time, the committee believes they are entitled, as a matter of equity and right, to Federal leases upon substantially the same terms and embracing the same minerals as those covered by the old leases. In essence the committee believes there are but two questions involved: (*a*) Is the lease valid under State law, and (*b*) is it still in effect?

Cut-off date

H. R. 4484 fixes January 1, 1949, as the date of leases for which exchange leases may be issued. As previously stated, the representatives of the Federal departments formerly advocated the date of the leases for which exchange leases would be granted as June 23, 1947, the date of the California decision. This position, in view of the fact that no California leases were issued after June 23, 1947, is primarily directed against the operators who have purchased leases from Texas and Louisiana subsequent to this date. Its basis is said to be that after this date operators in the Gulf coast area were on notice that the Federal Government would likely assert a claim to areas off the shores of those States.

The committee has carefully considered these and other arguments presented in favor of the use of June 23, 1947, as the cut-off date and has rejected this idea. The committee believes that every equitable consideration favors the use of January 1, 1949, as the appropriate cut-off date. As stated, no leases were issued by California subsequent to June 23, 1947, and no leases were issued by Texas, Louisiana, or Florida subsequent to October 1948. Moreover, the Government actually asserted no claim to Gulf offshore areas prior to December 21, 1948. Accordingly, the very arguments which require that the equities of the operators be protected and that exchange leases be issued compel the conclusion that exchange leases should be granted for all leases dated prior to January 1, 1949. To use the June 23, 1947, date as a cut-off date for all areas would in fact be to decide that Texas and Louisiana lost their titles at the time that California lost its case.

The same considerations, equities, and reasons for fixing the cut-off date for lease exchanges are equally applicable in using the effective date of the act in section 14 of the bill relating to waiver of liability for past operations on the Continental Shelf.

FEDERAL OFFICIALS NOW RECOGNIZE LESSEES' EQUITIES

As pointed out earlier in this report, the Solicitor General of the United States and the Secretary of the Interior formerly advocated that no Federal lease should be exchanged for a State lease issued subsequent to June 23, 1947. However, since the Supreme Court of the United States refused on December 11, 1950, to require Texas and Louisiana to account to the United States for any sums of money received under State leases prior to June 5, 1950, the Federal officials have ceased urging June 23, 1947, as the cut-off date. Moreover, the Departments of Interior and Justice in supporting Senate Joint Resolution 20 and House Joint Resolution 131 introduced in this session of the Congress have advocated the enactment of legislation which would recognize the right of each person who purchased a lease from a State prior to January 1, 1949, to continue operations under the lease for the remaining unexpired term thereof. The Solicitor General testified before the Senate Committee on Interior and Insular Affairs in support of Senate Joint Resolution 20, as follows:

> In the administration bill, in previous Congresses, it was proposed that State leases made prior to June 23, 1947, would be ratified or confirmed. In the resolution now before this committee, it is contemplated that State leases made prior to December 21, 1948—the date of the filing of the suits against Louisiana and Texas—and in force and effect on June 5, 1950, would be recognized by the Federal Government. One good reason why this proposal can now be accepted by the Federal Government is that the Supreme Court has declined to order Louisiana and Texas to account to the United States for revenues received under such leases prior to June 5, 1950, the date of the decisions in those cases.[13]

DIFFERENCES BETWEEN H. R. 8137, EIGHTY-FIRST CONGRESS AND H. R. 4484, EIGHTY-SECOND CONGRESS

When the committee reported favorably H. R. 8137 on May 17, 1950, no injunctions had been granted in the Texas and Louisiana cases restraining the lessees from exploring for and producing oil and gas from the submerged lands in dispute. However, such injunctions were issued on December 11, 1950. Consequently, the lessees on December 11, 1950, discontinued paying rents and royalties to the States, and began paying them to the Secretary of the Interior, who has deposited the funds in a special account awaiting congressional action.

Most of the leases sold by Texas and Louisiana were for a term of 5 years, called primary term, and as long thereafter as oil or gas is produced. Under such provisions, a lease upon which oil or gas was not discovered within the primary term, terminated. The injunctions have restrained the lessees from searching for oil or gas during a part of the period in which they had to make a discovery. Therefore, the period during which the lessees have been enjoined from exploring for oil and gas should not be charged against the primary term of the leases. In order to do equity each nonproductive lease should extend for a term from the effective date hereof equal to the term remaining unexpired on December 11, 1950, when the injunctions were issued. This would give to each lessee the same period of time after the effective date hereof in which to discover oil or gas that he had on December 11, 1950, when he was enjoined from conducting exploratory operations.

H. R. 4484 also requires all rents and royalties payable between June 5, 1950, and the effective date of the resolution under leases on lands quitclaimed to the States, and which have not been paid to the States or to the Secretary of the Interior, to be paid to the States within 90 days from the effective date of this bill.

The committee believes that the injunctions issued on December 11, 1950, in the Texas and Louisiana cases make necessary the perfecting amendments contained in H. R. 4484.

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[13] Hearings before the Committee on Interior and Insular Affairs, 82d Cong., 1st sess., on S. J. Res. 20, February 19, 20, 21, and 22, 1951, p. 23.

DIVISION OF PROCEEDS FROM THE CONTINENTAL SHELF

A precedent for allocation of revenues to the States is found in the Federal Mineral Leasing Act of 1920, as amended, which provides for remission to the States of 90 percent of the revenues from the leases on the Federal public domain, 37½ percent being directed to the States in which the lands are located and 52½ percent for reclamation purposes to 17 reclamation States.

Considering that several of the States were first claimants to large portions of the shelf areas, that the States will have to exercise their various police powers over the operations under the bill in vast areas of the shelf off their coasts, and that in reality these areas are merely extensions under comparatively shallow water of the uplands of these States, the committee believes these States have an equity which justified remitting to them a portion of the proceeds received from the shelf. Accordingly and following the precedent of the Federal Mineral Leasing Act, the bill provides for the remission to the respective coastal States of 37½ percent of the proceeds derived from leases on the shelf off their respective coasts.

The remaining 62½ percent is to be paid into the Treasury of the United States and credited to miscellaneous receipts, as recommended by the Bureau of the Budget.

Report No. 1778 of the Eightieth Congress is included in the appendix to supplement this report.